

ABSTRACT

5 A power source, power converter, and a radio and
microwave generator are provided. The power source comprises
a cell for the catalysis of atomic hydrogen to release power and
to form novel hydrogen species and compositions of matter
comprising new forms of hydrogen. The compounds comprise at
10 least one neutral, positive, or negative hydrogen species having
a binding energy greater than its corresponding ordinary
hydrogen species, or greater than any hydrogen species for
which the corresponding ordinary hydrogen species is unstable
or is not observed. The energy released by the catalysis of
15 hydrogen produces a plasma in the cell such as a plasma of the
catalyst and hydrogen. The power converter and radio and
microwave generator comprises a source of magnetic field which
is applied to the cell. The electrons and ions of the plasma orbit
in a circular path in a plane transverse to the applied magnetic
20 field for sufficient field strength at an ion cyclotron frequency
 ω_c that is independent of the velocity of the ion. The ions emit
electromagnetic radiation with a maximum intensity at the
cyclotron frequency. The power in the cell is converted to
coherent electromagnetic radiation. A preferred generator of
25 coherent microwaves is a gyrotron. The electromagnetic
radiation such as microwaves emitted from the ions is received
by at least one resonant receiving antenna of the power
converter and delivered to an electrical load such as a resistive
load or radiated as a source of radio or microwaves. The radio
30 or microwave signal may be modulated during broadcasting by
controlling the plasma intensity as a function of time or by
controlling the signal electronically.